

Demographic Survey of Married Women in Barau Dikko Specialist Hospital Kaduna State

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Abstract: This study undertakes a demographic survey of married women in Barau Dikko Specialist Hospital. A sample of 160 married women going for maternity (Antenatal and Postnatal care) were administered questionnaires. The analysis reveals that the mean age at menarche is 13 years; mean age of women at last delivery is 31 years and the average duration of breastfeeding for the women's first child is 14 months. The analysis also shows that the duration of breast feeding for the women's first child is 14 months. This research made use of correlation analysis to investigate if there is a relationship between breastfeeding and postpartum amenorrhea. We observed that there is a perfect positive correlation of 0.35 between the duration of postpartum amenorrhea (PPA) after the first life birth (months) and the duration of breastfeeding for the last but one life birth (months) at 1% level of level of significance. Also, it was observed that there is no relationship of 0.12 between the duration of postpartum amenorrhea (PPA) after the first life birth (months) and duration of breastfeeding for the first life birth (months).

Keywords: Correlation Analysis, Family Planning, Breastfeeding and Postpartum Amenorrhea

1. Introduction

Menarche is the first menstrual period or first menstrual bleeding in the females of human beings from both social and medical perspectives. It is often considered the central event of female puberty, as it signals the possibility of fertility. Timing of menarche is influenced by both genetic and environmental factors, especially nutritional status. The age at which girls begin to menstruate varies widely and may be influenced notably by the percentage of body fat. Anywhere from 10.8 years old to 14.6 years old is considered normal, although the average age of menarche has declined over the last century, but the magnitude of the decline and the factors responsible remain subjects of contention. Menarche in a girl is a sign of growing up and becoming a woman, which means that she could get pregnant in the month before her first period starts.

Couples have been using many different methods for child spacing or family planning in order to control fertility and it makes it evident that the ability to regulate their fertility is possible. The mechanism to reduce the likelihood of pregnancy or child birth is commonly used as part of family

planning (birth control) which is a way to help couple be able to space their family and to limit the number in the way that they desire or it is giving birth by choice and not chance. Also it is the spacing of child birth until such a time that is needed, and it is for the couples to determine what the right number is for them. However, child spacing varies from one family to another.

Amenorrhea is a menstrual condition characterized by absent menstrual periods for more than three monthly menstrual cycles. There are two types of amenorrhea, primary and secondary.

Primary amenorrhea is delayed menarche (the first menstrual period) and is defined as the absence of menarche by age 16 with otherwise normal pubertal development (development of breast or pubic hair), absence of menarche by age 14 with delayed pubertal development or absence of menarche two years after puberty is otherwise completed. Family history should be taken into consideration in any adolescent with primary amenorrhea; mothers who started to menstruate late will often have daughters who also menstruate late.

Secondary amenorrhea is the absence of menstruation after

menarche has taken place. Although it is not uncommon for menstrual period to be irregular during early adolescent, periods usually become regular within 18 months after one. After that time, it is considered abnormal for an adolescent to miss three consecutive periods. This problem is seen in about 1% of women of reproductive age.

An abortion is defined as the termination of a pregnancy by the removal or expulsion from the uterus of a fetus/embryo, resulting in its death. An abortion can occur spontaneously due to complications during pregnancy or can be induced, in human and other species. The term abortion most commonly refers to the induced abortion of a human pregnancy, while spontaneous abortions are usually termed miscarriages.

Postpartum amenorrhea is a biological variable associated with each conception regardless of its outcome. It depends on a number of factors which may vary from woman to woman in a population and for a woman depending on age, marital duration of pregnancies, nutritional status and practice of breast feeding etc. PPA in women varies from around a month to more than a year. The length of PPA depends on the intensity and length of breast feeding. Duration of PPA varies from community to community with respect to some social-economic and demographic characteristics of mothers.

Lactation is the secretion of milk by the mammary glands of the breasts, which usually begins at the end of pregnancy. A fluid called colostrums is secreted before the milk is produced both secretions are released in response to the sucking action of the infant on the nipple. Lactation is controlled by hormones (prolactin oxytocin), it stops when the baby is no longer fed at the breast. The process occurs in all female mammals, and in human it is commonly referred to as breast feeding or nursing.

Lactational Amenorrhea (LA) is the interval between birth of a child and subsequent return of menses; it's an important regulator of fertility in developing countries. Breastfeeding in particular, exclusive breast feeding has a significant contraceptive effect by postponing the return of ovulation after the birth of a child.

2. Method

2.1. Barau Dikko Specialist Hospital (BDSH)

The Barau Dikko Specialist system is a non-profit health care in Kaduna, Nigeria. It is a State owned hospital under the State Ministry of health. The hospital works closely with the State government to bring compassion to all its endeavors and to help meet the health needs of the community it serves. The hospital as "New General Hospital" was officially opened in 1985 by the then Nigeria President General Muhammadu Buhari. It was later renamed in 1999 as "Barau Dikko Specialist Hospital" after the death of late Barau Dikko, the first medical practitioner in the north. The line with the general corporate administrative set-up, the BDSH reports to the State Ministry of health through the Chief Medical Director who is in charge of the entire hospital, the

hospital Director who is in charge of administration and the matron in charge of nursing staff and assisting the director in running the hospital.

The hospital has several departments which includes Surgeon, internal medicine, ENT (ear, nose, throat), pediatrics, radiology, physiotherapy, pharmacy, medical record, immunization, counseling (for HI) casualty, family planning etc. There are also three (3) laboratories which are Hematology, microbiology and chem.-path. A total number of 250 beds were spread all over the male and female wards, pediatric and amenity rooms. The hospital has two (2) operation theatres, a functional mortuary, mechanize laundry, medical shop/pharmacy, 24 hours ambulances, house officers (house man ship training) and also provide consultancy services.

2.2. Method of Data Collection

The questionnaires were prepared to suit the number of sample, covering personal and demographic information such as number of a woman, age at menarche, age at effective marriage etc, and some operational definitions of the duration of postpartum amenorrhea, lactation. Data are going to be analyzed using the statistical package of social science (SPSS).

As a result of these, one hundred and sixty questionnaires were prepared and one hundred and forty four questionnaires were returned. So therefore, 144 questionnaires were used for the survey. All women were subjected to an interview questionnaire designed to reveal; age at menarche, age at first delivery, interval between effective marriage and first life birth, the duration of postpartum amenorrhea for both first, last but one and last life birth, the adopted contraceptive method, the duration of breastfeeding for both first, last but one and last life birth.

2.3. The Model

THE CHI-SQUARE [χ^2] DISTRIBUTION

The chi-square (χ^2) test is one of the simplest and most widely used non-parametric test in the statistical work. The symbol is the Greek letter chi. The chi-square distribution was discovered by Helmer in 1875 and was rediscovered independently by Karl Pearson in 1990. The quantity describes the magnitude of the discrepancy between theory and observation. It is defined as:

$$\chi^2 = \frac{\sum_{i=1}^n (O_i - E_i)^2}{E_i}$$

Where O refers to the observed frequency; and E refers to the expected frequency.

If $\chi^2=0$, the observed and theoretical frequencies agree exactly; while if $\chi^2>0$, they do not agree exactly. The larger the value of χ^2 , the greater the discrepancy between the observed and expected frequencies.

The chi-square distribution has one parameter v, the number of degree of freedom. As in case of t-distribution there is a distribution for each different number of degree of freedom.

For very small number of degrees of freedom, the chi-square distribution is severely skewed to the right. As the number of the degree of freedom increase, the curve rapidly becomes more symmetrical. For large value of v the chi-square distribution is closely approximated by the normal curve.

The chi-square is a probability distribution and the total area under the curve in each chi-square distribution is 1.0. Like the t-distribution so many different chi-square distributions are possible that is not practical to construct a table that illustrates the area under the curve for all possible value of the area.

2.4. Correlation Analysis

Correlation is a statistic technique used for analyzing the behavior of two or more variables. It expresses the relationship between the variables through a relative measure change and hence the units in which the variables are expressed are not considered in correlation analysis. It also measures the degree as well as the direction of the sympathetic movement in two or more variables.

The degrees are expressed by coefficient which range between -1 to +1 and the direction of change is indicated by the positive/negative signs, refers to the sympathetic movements in the same direction signs, and refers to the sympathetic movement in the same direction which refers to movements in the same direction which refers to movement in the opposite direction.

The cogent thing is that correlation is used to measure the strength of the association between quantitative variables under this concept of the degree of relationship between the variables is measured by using correlation coefficient denoted by “ r ”

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{[n \sum x^2 - (\sum x)^2][n \sum y^2 - (\sum y)^2]}}$$

Table 1. Distribution of respondent with respect to if they experienced any abortion during the interval between marriage and first live birth?

Have you had any abortion?	Frequency	Percent	Valid Percent	Cumulative Percent
No response	1	0.7	0.7	0.7
Yes	11	7.6	7.6	8.3
No	132	91.7	91.7	100.0
TOTAL	144	100.0	100.0	

The table 1 shows that 0.7% of the respondent did not respond to this question, 7.6% of them had abortion and 91.7% of them had no abortion between marriage and first live birth.

Table 2. Distribution of respondent with respect to the use of family planning?

Do you use family planning?	Frequency	Percent	Valid Percent	Cumulative Percent
No response	2	1.4	1.4	1.4
Yes	112	77.8	77.8	79.2
No	30	20.8	20.8	100.0
TOTAL	144	100.0	100.0	

Table 2 reveals that about 77.8% of the women use family planning while 20.8% do not use family planning.

Where x is the independent variable, y is the dependent variable and n is the number of observation.

It varies from $r=0$ which suggest there is no relationship existing between the variables, to $r=1$ which suggest a perfect linear correlation or $r=-1$ which suggests a perfect negative linear correlation. The correlation coefficient (r), is usually reported in terms of its square (r^2), interpreted as percent of variance.

A correlation of 1 means there is a perfect positive linear relationship between the two variables.

A correlation of -1 means that there is a perfect negative relationship between the two variables.

A correlation of 0 means there is no linear relationship between the two variables. However, correlation is rarely 0, -1, +1. Some real data show a moderately high relationship.

3. Result

The statistical analysis is aimed at data collection with regards to the relationship between breast feeding and postpartum amenorrhea among women in Barau Dikko Specialist Hospital and married women. The chapter sectionalized into presentation of the demographic variables of the respondents, an assessment of the relationship between breast feeding and postpartum amenorrhea among women, test of the study's hypothesis and an interpretation of the result.

3.1. Presentation of the Respondents' Demographic Characteristics

Among the demographic characteristics of the women selected for the study are the level of education, religion, ethnic group, and occupation of the women and that of their husbands. These variables are presented in frequencies and percentages respectively in the section.

Table 3. *If yes, what is the device adopted.*

Oral Contraceptive Pill	Frequency	Percent	Valid Percent	Cumulative Percent
No	107	74.3	74.3	74.3
Yes	37	25.7	25.7	100.0
Total	144	100.0	100.0	

The table 3 shows that 25.7% of the women use Oral Contraceptive Pill for family planning while the other respondents do not use it.

Table 4. *Responses to the use of Injection Contraceptive.*

Injection Contraceptive	Frequency	Percent	Valid Percent	Cumulative Percent
No	116	80.6	80.6	80.6
Yes	28	19.4	19.4	100.0
Total	144	100.0	100.0	

The table 4 shows that 19.4% of the women use the Injection Contraceptive for family planning while the others do not use it.

Table 5. *Responses to the use of IUCD Intrauterine.*

IUCD Intrauterine	Frequency	Percent	Valid Percent	Cumulative Percent
No	111	77.1	77.1	77.1
Yes	33	22.9	22.9	100.0
Total	144	100.0	100.0	

Table 5 shows that 22.9% of the women use IUCD Intrauterine for family planning while 77.1% of the women do not use it.

Table 6. *Responses to the use of Spermicidal.*

Spermicidal	Frequency	Percent	Valid Percent	Cumulative Percent
No	142	98.6	98.6	98.6
Yes	2	1.4	1.4	100.0
Total	144	100.0	100.0	

The table 6 shows that only 1.4% of the women use spermicidal for family planning.

Table 7. *Responses to the use of Natural Family Planning.*

Natural Family Planning	Frequency	Percent	Valid Percent	Cumulative Percent
No	115	79.9	79.9	79.9
Yes	29	20.1	20.1	100.0
Total	144	100.0	100.0	

Table 7 shows that 20.1% of the women use natural family planning while 79.9% do not use the natural family planning.

Table 8. *Distribution of respondent with respect to recommendation of family planning?*

Do you recommend family planning?	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	131	91.0	91.0	91.0
No	13	9.0	9.0	100.0
TOTAL	144	100.0	100.0	

The table 8 shows that 9.0% do not recommend family planning while 91.0% recommend family planning.

3.2. Descriptive Statistics

The descriptive analysis shows the mean distribution of age at menarche, age at last delivery, interval between marriage and first live birth, duration of postpartum amenorrhea after first live birth, duration of postpartum amenorrhea after last but one live birth, duration of postpartum amenorrhea after last live birth, duration of breastfeeding for the first live birth, duration of breastfeeding for the last but one live birth, e.t.c.

Table 9. Descriptive Statistics of the survey.

Descriptive Statistics					
Variables	N	Minimum	Maximum	Mean	Std. Deviation
AGE AT MENARCHE	144	10.00	30.00	13.8681	1.97625
AGE AS AT LAST DELIVERY	144	.00	47.00	31.3403	7.25670
INTERVAL BETWEEN MARRIAGE AND FIRST LIFE BIRTH (MONTHS)	144	.00	60.00	12.5417	8.45132
DURATION OF POST PARTUM AMENORRHEA (PPA) AFTER THE FIRST LIFE BIRTH (MONTHS)	144	.00	36.00	6.2083	5.82120
DURATION OF PPA AFTER LAST BUT ONE LIFE BIRTH (MONTHS)	144	.00	48.00	6.4306	7.63563
DURATION OF PPA AFTER LAST BIRTH (MONTHS)	144	.00	60.00	7.9861	10.76902
DURATION OF BREAST FEEDING FOR YOUR FIRST CHILD	144	.00	36.00	14.0903	5.75965
DURATION OF BREAST FEEDING FOR THE LAST BUT ONE CHILD (MONTHS)	144	.00	24.00	13.0069	6.00174
DURATION OF BREAST FEEDING FOR THE LAST CHILD (MONTHS)	144	.00	30.00	13.4028	6.06644
Valid N (listwise)	144				

From table 9, we observed that the mean age at menarche is 13.87 years. The mean age at last delivery of the women was found to be 31.34 years. The mean interval between marriage and first live birth was found to be 12.54 months.

The mean duration of postpartum amenorrhea after first live birth was found to be 6.20 months, the mean duration of PPA for the last but one child is 6.43 months, mean duration of postpartum amenorrhea after the last live birth is 7.99 months. The mean duration of breastfeeding for the first child is 14.09 months, the mean duration of breastfeeding for the last but one child is 13.00 months; the mean duration of breastfeeding for the last child is 13.40 months.

3.3. Data Analysis

Correlation Analysis

Table 10. Correlation Analysis.

VARIABLES		AGE AT MENARCHE	DURATION OF POST PARTUM AMENORRHEA (PPA) AFTER THE FIRST LIFE BIRTH (MONTHS)
AGE AT MENARCHE	Pearson Correlation	1	.116
	Sig. (2-tailed)		.166
	N	144	144
DURATION OF POST PARTUM AMENORRHEA (PPA) AFTER THE FIRST LIFE BIRTH (MONTHS)	Pearson Correlation	.116	1
	Sig. (2-tailed)	.166	
	N	144	144
DURATION OF PPA AFTER LAST BUT ONE LIFE BIRTH (MONTHS)	Pearson Correlation	.118	.781**
	Sig. (2-tailed)	.160	.000
	N	144	144
DURATION OF BREAST FEEDING FOR YOUR FIRST CHILD	Pearson Correlation	.122	.121
	Sig. (2-tailed)	.145	.150
	N	144	144
DURATION OF BREAST FEEDING FOR THE LAST BUT ONE CHILD (MONTHS)	Pearson Correlation	.139	.348**
	Sig. (2-tailed)	.098	.000
	N	144	144

Table 10. Continued.

VARIABLES		DURATION OF PPA AFTER LAST BUT ONE LIFE BIRTH (MONTHS)	DURATION OF BREAST FEEDING FOR YOUR FIRST CHILD	DURATION OF BREAST FEEDING FOR THE LAST BUT ONE CHILD (MONTHS)
AGE AT MENARCHE	Pearson Correlation	.118	.122	.139
	Sig. (2-tailed)	.160	.145	.098
	N	144	144	144
DURATION OF POST PARTUM AMENORRHEA (PPA) AFTER THE FIRST LIFE BIRTH (MONTHS)	Pearson Correlation	.781**	.121	.348**
	Sig. (2-tailed)	.000	.150	.000
	N	144	144	144
DURATION OF PPA AFTER LAST BUT ONE LIFE BIRTH (MONTHS)	Pearson Correlation	1	.170*	.364**
	Sig. (2-tailed)		.041	.000
	N	144	144	144
DURATION OF BREAST FEEDING	Pearson Correlation	.170*	1	.511**

VARIABLES		DURATION OF PPA AFTER LAST BUT ONE LIFE BIRTH (MONTHS)	DURATION OF BREAST FEEDING FOR YOUR FIRST CHILD	DURATION OF BREAST FEEDING FOR THE LAST BUT ONE CHILD (MONTHS)
FOR YOUR FIRST CHILD				
	Sig. (2-tailed)	.041		.000
	N	144	144	144
DURATION OF BREAST FEEDING FOR THE LAST BUT ONE CHILD (MONTHS)	Pearson Correlation	.364**	.511**	1
	Sig. (2-tailed)	.000	.000	
	N	144	144	144

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The table 10 confirms that there is a perfect positive correlation of 0.35 between the duration of postpartum amenorrhea (PPA) after the first life birth (months) and duration of breastfeeding for the last but one life birth (months) at 1% level of significance; it shows that there is also a relationship of 0.78 between duration of postpartum amenorrhea (PPA) after the first life birth (months) and duration of postpartum amenorrhea (PPA) after last but one life birth (months) at 1% level of significance, It shows that there is no relationship of 0.12 between the duration of postpartum amenorrhea (PPA) after the first life birth (months) and duration of breastfeeding for the first life birth (months). It also shows that there is no relationship of 0.12 between duration of postpartum amenorrhea (PPA) after the first life birth (months) and age at menarche.

It further shows a positive correlation of 0.17 between the duration of PPA after last but one life birth (months) and duration of breast feeding for the first life birth (months) at 5% level of significance. It further shows a perfect correlation of 0.36 between duration of PPA after last but one life birth (months) and duration of breast feeding for the last but one life birth (months). It shows that there is also a perfect correlation of 0.51 between the duration of breast feeding for the first life birth (months) and duration of breast feeding for the last but one life birth (months) at 1% level of significance.

It shows no correlation of 0.12 between age at menarche and duration of PPA after the first life birth. It also reveals no correlation of 0.14 between age at menarche and duration of breast feeding for the last but one life birth (months).

4. Conclusion

The growing appreciation of the value of women education in Northern Nigeria is increasing but more has to be done concerning female child education, and so women education should be encouraged in order for them to know the importance of fertility rate control in the nation.

Women should be enlightened on the importance of family planning or child spacing because as more people choose family planning fertility falls and population growth slows. Although fertility has fallen throughout the world, further declines would make a crucial difference in many developing countries. World population has reached about 8 billion and is growing by nearly 80 million people each day. Slower

population growth helps to protect the environment, it conserves resources, preserves clean air and water, eases pressure on cities and helps avoid conflict and most of all a slower population growth aids development, it buys time and with more population in their production years, provides a demographic bonus that can be invested in education, job creation, healthcare and other efforts to raise the living standards. For the women, it can open doors to education, employment and community involvement.

The sooner fertility falls to low level, the better most countries will be able to achieve sustainable development. Even small declines in fertility today will make a sustainable difference in population size in the future.

In demographic studies and with the physiological evidence suggesting that resumption of ovulation, and thus resumption of menses, depends on a particular hormonal balance, which in turn depends on sucking stimulus. It confirms the importance of breastfeeding in the resumption of menses. Most women are happy when they have longer period of amenorrhea, for this will prevent conception in the first six month postpartum. Yet because, mostly all mothers lactate their infants, still with the method of Lactation Amenorrhea Method (LAM) applied by them, the LAM users have a contraceptive method at hand that she can initiate herself when the LAM criteria no longer holds.

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